



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,016	09/24/2003	Shin-Tai Lo	2450-0553P	1496
2292	7590	05/08/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			SHAPIRO, LEONID	
			ART UNIT	PAPER NUMBER
			2629	

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/669,016	LO, SHIN-TAI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Leonid Shapiro	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 24 September 2003.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-5 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-5 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 24 September 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naoaki (JP 2002-251167) in view of Mizukoshi et al. (US Patent No. 6,870,322 B1).

As to claim 1, Naoaki teaches a display device driving apparatus for automatically adjusting the optimum brightness under limited power consumption See Solution), comprising:

a data driver and a scan driver (See Drawing 3, items 510, 530, paragraph 0019), wherein each pixel comprising:

a switch unit which has two input ends and an output end, the input ends connecting respectively to a data line and a scan line (See Drawing 1, item 10);

a storage unit which has one end connecting to a power supply line and another end connecting to the output end of the switch unit (See Drawing 1, items Cs, Vsc);

a driver unit which has one input end connecting to the juncture of the output end of the switch unit and an input end of the storage unit and another input end connecting to the power supply line (See Drawing 1, item 20); and

an organic light-emitting diode which has a cathode and an anode, the anode being connected to the power supply line through the output end of the driver unit (See Drawing 1, item EL).

Naoaki does not disclose the organic light-emitting diode element is connected to each other through a co-cathode connection line in a co-cathode fashion, the co-cathode connection line being connected to a resistor which has another end grounded.

Mizukoshi et al. teaches the organic light-emitting diode element is connected to each other through a co-cathode connection line in a co-cathode fashion, the co-cathode connection line being connected to a resistor which has another end connected to the power supply (See Fig. 4, item R7, Col. 4, Lines 22-31).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Mizukoshi et al. into Naoaki system and replace power supply terminal with ground connection in order to detect the total current flowing to all the OLED elements power arranged in the pixel matrix (See Col. 2, Lines 17-19).

As to claims 2-4, Naoaki teaches the switch unit, driver unit are TFT transistors and storage unit is capacitor (See Drawing 1, items 10, 20, CS, paragraph 0016).

As to claim 5, Naoaki teaches a method for driving a display device to automatically adjust the optimum brightness under limited power consumption See Solution) with display device consisting of pixel devices (See Drawing 1), each pixel device having a driver unit (See Drawing 1, item 20) to drive organic light-emitting diode to emit light (See Drawing 1, item EL), the method comprising steps of:

connecting the anode of the organic light-emitting diode of each pixel to a power source line through the driver unit (See Drawing 3, items 200, VL, paragraph 0019);

wherein total current ( $I_{total}$ ) variations flowing out of the co-anode connection line is used to generate different voltage drops across the resistor and adjust  $V_{sd}$  (voltage between the source electrode and the drain electrode) of the driver unit thereby to alter the ratio value of each gray scale brightness relative to image data value (See Solution paragraphs 0019-0020).

Naoaki does not disclose interconnecting the organic light-emitting diode of each pixel in a co-cathode fashion through a co-cathode connection line; connecting the co-cathode connection line to a resistor; grounding other end of the resistor.

Mizukoshi et al. teaches interconnecting the organic light-emitting diode of each pixel in a co-cathode fashion through a co-cathode connection line; connecting the co-cathode connection line to a resistor (See Fig. 4, item R7, Col. 4, Lines 22-31).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate teaching of Mizukoshi et al. into Naoaki system and replace power supply terminal with ground connection in order to detect the total current flowing to all the OLED elements power arranged in the pixel matrix (See Col. 2, Lines 17-19).

***Telephone Inquire***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 571-272-7683. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LS  
05.05.06



RICHARD HJERPE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600